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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,436	04/02/2001	Toshiaki Yoshihara	0671.65390	8194

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EXAMINER

LEWIS, DAVID LEE

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 08/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/824,436

Applicant(s)

YOSHIHARA ET AL.

Examiner

David L Lewis

Art Unit

2778

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Title: Display Panel Including Liquid Crystal Material Having Spontaneous Polarization

DETAILED ACTION

Claim Rejections - 35 U.S.C. § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:
A person shall be entitled to a patent unless --
(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
2. **Claims 1-2 are rejected under 35 U.S.C. 102(a) as being anticipated by Hasegawa et al. (6344889).**
3. **As in claim 1, Hasegawa et al. teaches of a liquid crystal device, figured 1-3, comprising: a liquid crystal material characterized by spontaneous polarization, column 6 lines 50-67, being applied signal for controlling a light transmittance of said material, column 18 lines 40-55, wherein a voltage of said signal for writing data, corresponding to an image to be displayed and switched by thin film transistors, to said material is offset positively or negatively from 0 V at said material except during applying said signal,, column 14 lines 50-60, column 20 lines 30-45. As in claim 2, Haseqawa et al. teaches wherein said signal is offset positively or negatively so that a light transmission through said liquid crystal material being driven by said signal becomes to be blocked, column 18 lines 45-55.**

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Claim Rejections - 35 U.S.C. § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. **Claims 3-6 and 8-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa et al. (6344889) in view of Hasegawa et al. (6335717).**
6. **As in claim 3, Hasegawa et al. (889) teaches of a liquid crystal device comprising: a first substrate including a first electrode on a first face thereof, figure 5 item 3 and 13; a second substrate including a second electrode on a second face thereof, figure 5 item 2 and 9 or 10, wherein said second substrate and said first substrate are sealed spaced apart so that said first and second face each other, figure 5 items 2 and 3; a liquid crystal material having spontaneous polarization filled in a space between said first and second substrates, figure 5 item 16; a first voltage generating circuit for supplying a voltage to said first electrode, column 14 lines 50-57, column 18 lines 40-43; and a data**

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signal circuit for supplying a data pulse to said second electrode, wherein a voltage across said liquid crystal between said first and second electrodes is kept positively or negatively to a reference voltage of said device except during said data pulse being applied when an image is displayed, **column 14 lines 50-55, column 20 lines 35-50**. Wherein Hasegawa teaches of driver circuits and applying an offset voltage to the common electrode, implying said first voltage and data signal circuits. And further Hasegawa et al.(717) teaches of said first and second voltage generating circuit implied by Hasegawa et a. (889), wherein Hasegawa (717) teaches of a first voltage generating circuit, figure 2 item 35, and a data signal circuit for supplying a data pulse, figure 2 item 33. Both are directed to ferroelectric display system of the same type and therefore **it would have been obvious to the skilled artisan** at the time of the invention to that the first voltage and data signal circuits of Hasegawa (717) are applied in Hasegawa (889), given the usage is known and necessary for the method as described by Hasegawa (889). **As in claim 4**, Hasegawa teaches wherein said data pulse is offset positively or negatively so that a light transmission through said liquid crystal material being driven by said pulse becomes to be blocked, column 18 lines 40-55. **As in claim 5**, Hasegawa teaches wherein said second substrate having an active element electrically connected to said second electrode so as to electrically control a picture element, figure 5 item 4. **As in claim 6**, Hasegawa teaches wherein said voltage supplied by the said first voltage generating circuit is offset so that a voltage across said liquid crystal material between said first and second electrodes is kept positively

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or negatively to said reference voltage of said device except during said data pulse being applied,
column 14 lines 50-57, column 20 lines 35-50.

7. **As in claims 9, 10, and 12, Hasegawa et al.(889) in view of Hasegawa (717) as applied to claim 3,** teaches of a liquid crystal display panel comprising a first substrate including a common electrode on a first face thereof, (889), **figure 5 items 3 and 13**; a second substrate including data bus lines, scanning bus lines, and switching elements which are connected to one of said data bus lines and one of said scanning bus lines on a second face thereof (889), **figure 5 items 2, 4, 9 and 10**, wherein said second substrate and said first substrate are sealed spaced apart so that said first and second faces face each other, (889), **figure 5 items 2 and 3**; a liquid crystal material having spontaneous polarization filled in a space between said first and second substrates, (889) **figure 5 item 16**; and a common electrode voltage generating circuit for supplying a voltage to said common electrode, (717) figure 2 item 35; and a common reference voltage generating circuit for defining a reference voltage of said data bus lines, wherein said reference voltage is offset to positive or negative voltages, (898), **column 14 lines 50-55, column 20 lines 35-50, (717) column 10 lines 60-67.**
8. **As in claim 13, Hasegawa (889) teaches of** wherein said liquid crystal material having spontaneous polarization is ferroelectric liquid crystal material, column 6 lines 60-65. **As in claims 11 and 14, Hasegawa (889) teaches of** wherein said first substrate has a color filter, column 6 lines 55-60,

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column 7 lines 46-61. **As in claims 8 and 15, Hasegawa (889) teaches of** further comprising: polarizer films provided on each outer faces of said first and second substrate, wherein said common voltage is offset so as that a light transmission of said liquid crystal material becomes to be block, column 7 lines 1-6, figure 3 item 7. **As in claim 16, Hasegawa (889) teaches of** further comprising: a light source emitting a plurality of monochromatic colors, wherein each monochromatic color is emitted by said light source time divisionally in synchronism with a operation of said liquid crystal display panel, .

9. **Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa et al. (6344889) in view of Hasegawa et al. (6335717), further in view of Kondoh (2001/0011986) and Yamamoto et al. (6348910).**
10. **As in claim 7, Hasegawa (889) in view of Hasegawa (717) as applied to claim 3 as amended,** further teaches a light source for emitting more than monochromatic lights, **column 17 lines 5-12,** each of said monochromatic lights being emitted toward said first or second substrates, wherein a voltage across said liquid crystal material between said first and second electrodes is kept positively or negatively to a reference voltage of said device during except said data pulse being applied, **column 14 lines 50-55, column 20 lines 35-50, (717) column 10 lines 60-67.** However both are silent as to driving in a time divisional method, and more than one backlight. Said time divisional

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technique and multiple backlight is well known as an established method for driving a ferroelectric display. **Kondoh explicitly teaches** of driving a ferroelectric display with said known time divisional technique, wherein he further teaches of an offset voltage being applied to the pixel, figure 6, paragraph 10. Further, **Yamamoto et al. teaches** of more than one backlight for a color ferroelectric display, figure 7 items 131-134, of the type suggested by Hasegawa and Kondoh. Therefore it would have been obvious to the skilled artisan at the time of the invention to drive the red, blue, green color filtered and backlight device of Hasegawa in view of Hasegawa, by a time division method as suggested by Kondoh, with multiple backlights as suggested by Yamamoto et al., because ferroelectric displays are known to be driven time divisionally, and with a plurality of backlights, as found in claim 7.

Response to Arguments

11. Applicant's arguments filed 5/23/2003 have been fully considered but they are not persuasive. Hasegawa et al. teaches of said offset for driving a liquid crystal display column 14 lines 50-57, wherein the offset is used for the purpose of displaying an image on the display as claimed. The drive technique of Kondoh is known for use in active and passive matrix display. The rejection over Hasegawa et al. in view of Kondoh and Yamamoto is maintained.

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Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David L. Lewis** whose telephone number is **(703) 306-3026**. The examiner can normally be reached on MT and THF from 8 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached on (703) 305-4938. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

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Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



BIPIN SHALWALA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600